

SHIBATA, et al., 10/699,934
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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of inspecting for defects comprising the steps of:
 - dividing illuminating light emitted by a light source into four beams;
 - applying the divided four beams to a sample to illuminate the sample through an objective lens;
 - composing the applied of said divided four beams that have been reflected off said sample and passed through said objective lens into a composed beam of light;
 - causing the composed beam to form an image;
 - obtaining an image of said sample by detecting the composed beam which has formed the image; and
 - detecting defects of said sample by using the obtained image.
2. (Original) A method of inspecting for defects according to claim 1, wherein said illuminating light is divided into four beams by using a first birefringent prism and a second birefringent prism in such a way that the light emitted from said light source is divided into two beams by the first birefringent prism, and each of said divided two beams is further divided into two by the second birefringent prism.
3. (Original) A method of inspecting for defects according to claim 1, wherein the illuminating light is further applied obliquely to said sample from outside of said objective lens in the step of illuminating said sample.

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4. (Currently Amended) A method of inspecting for defects according to claim 1, wherein, with respect to an electric field vector of said composed beam of light, an optical image is formed by reducing the amplitude of the light reflected ~~off~~off a flat portion of the sample in the step of obtaining said image.

5. (Canceled)

6. (Currently Amended) A method of inspecting for defects comprising the steps of:

illuminating a substrate having patterns formed on its surface with four polarized beams, through an objective lens, whose directions of electric field vectors are aligned;

imaging said substrate by forming an optical image on a sensor surface ~~according to with a composed beam of light which is composed with lights reflected light from said substrate by the illuminating and which has entered said objective lens during the illumination; and~~

inspecting for defects on a surface of said substrate by processing the image obtained by the imaging.

7. (Original) A method of inspecting for defects according to claim 6, wherein an optical image is formed by adjusting the amount of zero-order light of the light reflected from said substrate and the directions of electric field vectors in said step of imaging.

8. - 9. (Canceled)

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10. (Currently Amended) A method of inspecting for defects comprising the steps of:

illuminating a substrate having patterns formed on its surface;

imaging the illuminated substrate; and

inspecting for defects on a surface of said substrate by processing the image obtained by the imaging,

wherein, in said illuminating step, bright-field illumination and a combination of bright-field and dark-field illumination are switched for illuminating said substrate in accordance with a type of a pattern formed on the surface of said substrate, and a light used in the bright-field illumination includes at least four beams of light, and in said imaging step, the four beams of light of the bright-field illumination reflected from said substrate are composed into a composed beam of light used for the imaging.

11. (Original) A method of inspecting for defects according to claim 10, wherein said bright-field illumination used in said illuminating step is the one in which differential interference is available.

12. (Original) A method of inspecting for defects according to claim 10, wherein the light used in the bright-field illumination and the light used in the dark-field illumination are emitted from the same light source in said illuminating step.

13. (Canceled)

14. (Currently Amended) An apparatus for inspecting for defects according to claim ~~13~~, 15, wherein said illuminating means comprises two birefringent prisms, the light emitted from said light source is divided into two beams by one of the two

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birefringent prisms, and each of said two divided beams is further divided into two beams by the other birefringent prism.

15. (Currently Amended) ~~An apparatus for inspecting for defects according to claim 13,~~ An apparatus for inspecting for defects comprising:

a light source;

illuminating means illuminating a substrate having patterns formed thereon with light that has been emitted from the light source and divided into four beams;

image forming means for composing each of said four beams after being reflected off said substrate being illuminated by the illumination means and forming an optical image of said illuminated substrate;

image obtaining means detecting an optical image of said substrate as formed by the image forming means and obtaining an image of said substrate; and

defect detecting means processing the image obtained by the image obtaining means and detecting defects on said substrate;

wherein said illuminating means has a first polarization adjusting part adjusting the polarizing direction of the four divided beams illuminating said substrate, and said image forming means has a second polarization adjusting part adjusting the polarization direction of the beam made by composing each reflected light of said four beams from said substrate.

16. (Currently Amended) ~~An apparatus for inspecting for defects according to claim 13 further comprising~~ An apparatus for inspecting for defects comprising:

a light source;

illuminating means illuminating a substrate having patterns formed thereon with light that has been emitted from the light source and divided into four beams;

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image forming means for composing each of said four beams after being reflected off said substrate being illuminated by the illumination means and forming an optical image of said illuminated substrate;

image obtaining means detecting an optical image of said substrate as formed by the image forming means and obtaining an image of said substrate;

defect detecting means processing the image obtained by the image obtaining means and detecting defects on said substrate; and

a branching means branching the light emitted from said light source, wherein one of the beams of light branched by the branching means is allowed to enter said illuminating means, and the other one of the beams of light branched by the branching means is allowed to enter an oblique illuminating means illuminating said substrate obliquely.

17. (Original) An apparatus for inspecting for defects comprising:

a light source;

a branching means branching the light emitted from the light source into two optical paths;

a bright-field illuminating means illuminating a substrate having patterns formed on its surface with one of the beams of light branched by said branching means through an objective lens;

a dark-field illuminating means illuminating said substrate obliquely from outside of said objective lens with the other one of the beams of light branched by said branching means;

an image forming means forming an optical image of said substrate with the light reflected off said substrate illuminated by said bright-field illuminating means and said dark-field illuminating means and passing through said objective lens;

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an image obtaining means obtaining an image of said substrate by detecting an optical image of said substrate formed by the image forming means; and
a defect detecting means processing the image obtained by the image obtaining means and detecting defects on said substrate.

18. (Original) An apparatus for inspecting for defects according to claim 17, wherein said bright-field illuminating means comprises a beam dividing part dividing the light branched by said branching means into four beams.

19. (Currently Amended) An apparatus for inspecting for defects according to claim 17, wherein said bright-field illuminating means comprises a first polarizing adjusting part adjusting a polarizing direction of the light branched by said branching means and said image forming means comprises a second polarizing adjusting part adjusting a polarizing direction of the light reflected ~~off~~off said substrate illuminated by said bright-field illuminating means and said dark-field illuminating means and passing through said objective lens.

20. (New) An apparatus for inspecting for defects according to claim 15, wherein said illuminating means comprises two birefringent prisms, the light emitted from said light source is divided into two beams by one of the two birefringent prisms, and each of said two divided beams is further divided into two beams by the other birefringent prism.